

Claims

1. An aircraft including landing gear movable between a  
5 deployed position and a stowed position, wherein the landing  
gear includes a plurality of longitudinal load bearing  
supports, the supports being arranged in parallel, and a noise  
reduction fairing, the landing gear being so arranged that, in  
10 use when the landing gear is in its deployed position, the  
supports are arranged one behind the other in the direction of  
the air flow and the noise reduction fairing at least  
partially fair the front load bearing support.
2. An aircraft according to claim 1, wherein the noise  
15 reduction fairing comprises a fairing element that extends  
around at least two of the load bearing supports.
3. An aircraft according to claim 2, wherein the fairing  
element encompasses at least two of the load bearing supports.  
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4. An aircraft according to any preceding claim, wherein the  
landing gear is arranged such that one or more service pipes,  
cables, conduits, or the like, are provided between at least  
two of the longitudinal load bearing supports.  
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5. An aircraft according to any preceding claim, wherein at  
least one of the load bearing supports includes a shock  
absorbing element.
- 30 6. An aircraft according to any preceding claim, wherein at  
least two of the load bearing supports include shock absorbing  
elements, and one of the shock absorbing elements is  
configured to have a different shock absorbing capacity from  
at least one of the other shock absorbing elements.

7. An aircraft according to any preceding claim, wherein at least two of the load bearing supports are configured to withstand significantly different loads.

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8. An aircraft according to any preceding claim, wherein the load bearing supports are arranged to support loads when the aircraft is on the ground via wheels mounted on a bogie, and two of the load bearing supports are arranged to be able to vary the pitch of the bogie.

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9. An aircraft including a noise reduction fairing, the fairing including an air-intake that is fed via an air-duct to an air exhaust, the fairing being so shaped that, in use during approach on landing, the air flowing through the air-duct produces a noise-reducing air flow that diverts air away from parts of the aircraft that generate unwanted noise.

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10. An aircraft according to claim 9, wherein at least part of the noise-reducing airflow flows out of the air-exhaust.

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11. An aircraft according to claim 9 or claim 10, wherein fairing includes a second air in-take and at least part of the noise-reducing airflow flows into at least one of the two air-takes.

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12. An aircraft according to any of claims 9 to 11, wherein the fairing is so arranged that the noise-reducing air flow is in the form of at least a part of an air-curtain.

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13. An aircraft according to claim 12, wherein the noise-reduction fairing is so arranged and configured that, in use, the air curtain is formed in such a way that a quiet region is formed between a part of the aircraft and the air curtain.

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14. An aircraft according to any of claims 9 to 13, wherein the air-intake is in the form of a ram-intake.

5 15. An aircraft according to any of claims 9 to 14, wherein the air duct includes a passageway that is narrower in cross-section than the rest of the air-duct.

10 16. An aircraft according to claim 15, wherein the passageway forms a venturi tube.

15 17. An aircraft according to claim 16, wherein the noise-reducing airflow has an average speed of over 120% that of the speed of the free-stream airflow relative to the aircraft.

18. An aircraft according to any of claims 9 to 17, wherein the air exhaust comprises a plurality of outlets.

20 19. An aircraft according to any of claims 9 to 18, wherein the noise reduction fairing is mounted on the landing gear such that the noise-reducing air flow diverts air away from parts of the landing gear that generate unwanted noise.

25 20. An aircraft including a landing gear movable between a deployed position and a stowed position, including a load bearing support, the support being connected between the upper end of the landing gear and a wheel assembly at the lower end of the landing gear, the support including a piston and barrel arrangement, the piston being positioned closer to the lower end of the landing gear than the barrel, wherein the landing gear includes a noise reduction fairing that fairs the barrel.

21. An aircraft according to claim 20, wherein the barrel comprises a cylindrical bore having a circular cross-section

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that accommodates the piston, which is shaped to fit inside the cylindrical bore.

22. An aircraft according to claim 20 or claim 21, wherein  
5 the noise-reduction fairing is arranged to provide the barrel with a streamlined shape.

23. An aircraft according to any of claims 20 to 22, wherein  
10 the piston and barrel arrangement is so configured that, when the landing gear is in its deployed position and the piston and barrel are extended to the normal operating maximum extension, the majority of the piston is accommodated inside the landing gear bay of the aircraft.

15 24. An aircraft according to any of claims 20 to 24, wherein the landing gear includes one or more torque links for transmitting loads sustained during landing of the aircraft, and the piston and barrel arrangement is so configured that,  
20 when the landing gear is in its deployed position and the piston and barrel are extended to the normal operating maximum extension, the one or more torque links are accommodated inside the landing gear bay of the aircraft.

25 25. An aircraft according to any of claims 20 to 23, wherein the landing gear includes steering mechanisms for steering the wheel assembly, and the piston and barrel arrangement is so configured that, when the landing gear is in its deployed position and the piston and barrel are extended to the normal operating maximum extension, the steering mechanisms are  
30 accommodated inside the landing gear bay of the aircraft.

26. An aircraft according to any of claims 1 to 25, wherein the landing gear is a nose landing gear.

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27. An aircraft according to any of claims 1 to 24, wherein the landing gear is a main landing gear.

28. An aircraft landing gear suitable for use as the landing  
5 gear of the aircraft according to any preceding claim.

29. Means for converting a conventional aircraft into an aircraft according to any of claims 1 to 27, wherein the means includes at least one noise reduction fairing.

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30. A method of reducing noise caused by landing gear on an aircraft including a step of manufacturing a landing gear according to claim 28.

15 31. A method according to claim 30 further including a step of modifying an existing design in order to reduce noise caused by the landing gear.